UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,148	04/08/2004	Cary Lee Bates	ROC920030386US1	9493

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EXAMINER
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ART UNIT	PAPER NUMBER
2192	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

		Application No.	Applicant(s)
Office Action Summary		10/821,148	BATES ET AL.
		Examiner	Art Unit	
		Thuy Dao	2192	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *16 September 2008*.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-20* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *08 April 2008* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____.

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Applicant's submission filed on September 16, 2008 has been entered.

2. Claims 1-20 have been examined.

Response to Amendments

3. In the instant amendment, claims 1-20 have been amended.

4. The objection to the specification and claims 9-12 is withdrawn in view of Applicant's amendments.

Response to Arguments

5. Applicants' arguments have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections – 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bates (art of record, US Patent No. 6,587,967) in view of US Patent Publication No.

2003/0005415 A1 (art made of record, hereafter "Schmidt") and Akgul (art of record, US Patent Publication No. 2003/0074650 A1).

Claim 1:

      Bates discloses *a method comprising:*

              saving a definition of a region in a program bounded by an entry breakpoint and an end breakpoint (e.g., FIG. 4, block 66-76, col.6: 15-36; FIG. 8, field 150e, col.8: 37-65),

              wherein the entry breakpoint is executed (e.g., FIG. 5, block 102/YES and block 106, col.7: 27-52);

              saving a definition of a scoped breakpoint within the region (e.g., FIG. 4, block 56/YES and block 60/NO, col.6: 1-36; FIG. 2, item 32, col.5: 39-48);

              wherein the region contains the scoped breakpoint and wherein the scoped breakpoint is different from the entry breakpoint and the end breakpoint (e.g., FIG. 4, block 56/YES, col.6: 1-36; FIG. 7, col.8: 30-65),

              if a first thread that executes an instance of the program encounters the entry .breakpoint, saving an identifier of the first thread (e.g., FIG. 5, block 102/YES and block 104, col.7: 36-59; FIG. 8, filed 150j, col.8: 57-65);

              if the first thread encounters the scoped breakpoint within the region, halting execution of the first thread that encountered the scoped breakpoint (e.g., FIG. 3, block 96/NO and block 122, col.7: 12-27; FIG. 6, col.8: 16-28).

      Bates does not explicitly disclose *a plurality of threads execute the program, wherein the entry breakpoint is executed conditionally further comprises some of the plurality of threads encounter the entry, breakpoint and other of the plurality of threads do not encounter the entry breakpoint.*

      However, in an analogous art, Schmidt further discloses *a plurality of threads execute the program, wherein the entry breakpoint is executed conditionally further comprises some of the plurality of threads encounter the entry, breakpoint and other of the plurality of threads do not encounter the entry breakpoint* (e.g., [0009], [0055], [0064], [0094]).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Schmidt's teaching into Bates' teaching. One would have been motivated to do so to monitor/debug a specific condition and halt the execution of a program only when a predetermined value is obtained when the breakpoint is encountered as suggested by Schmidt (e.g., [0009]).

Neither Bates nor Schmidt explicitly discloses other limitations. However, in an analogous art, Akgul further discloses:

if the first thread encounters the scoped breakpoint within the region, determining whether the identifier was saved in response to the first thread that executes the instance of the program encountering the entry breakpoint (e.g., [0053] and [0056]);

if the identifier was saved in response to the first thread that executes the instance of the program encountering the entry breakpoint and the scoped breakpoint was encountered by the first thread, halting execution of the first thread that encountered the scoped .breakpoint (e.g., FIG. 10, [0055]-[0056]); and

if the identifier was not saved, the first thread that executes the instance of the program did not encounter the entry breakpoint, and the scoped breakpoint was encountered by the first thread that executes the instance of the program, allowing execution of the first thread to continue after the scoped breakpoint was encountered without giving control to a user (e.g., [0053]-[0056]).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Akgul's teaching into Bates' teaching. One would have been motivated to do so to provide an efficient and flexible debugging mechanism and differentiate between the operating system first threads or processes by using the detailed state information about the OS internals as suggested by Akgul (e.g., [0016] and [0019]-[0020]).

Claim 2:

The rejection of claim 1 is incorporated. Bates also discloses *after the first thread encounters the end breakpoint, removing the identifier of the first thread that was saved* (e.g., col.6: 1-49; col.7: 28 – col.8: 5)

Claim 3:

The rejection of claim 2 is incorporated. Bates also discloses *allowing execution of the first thread to continue upon the first thread encountering the end breakpoint without giving control to the user* (e.g., col.3: 36 – col.4: 24; col.8: 29-65).

Claim 4:

The rejection of claim 3 is incorporated. Bates also discloses *allowing execution of the first thread to continue upon the first thread encountering the entry breakpoint without giving control to the user* (e.g., col.2: 41 – col.3: 4; col.5: 7-54).

Claim 5:

Bates discloses *a apparatus comprising:*

means for saving a definition of a region in a program bounded by an entry breakpoint and an end breakpoint (e.g., FIG. 4, col.6: 15-36; FIG. 8, filed 150e, col.8: 37-65),

wherein the entry breakpoint is executed (e.g., FIG. 5, block 102 and 106, col.7: 27-52);

means for saving a definition of a scoped breakpoint within the region (e.g., FIG. 4, block 56 and 60, col.6: 1-36; FIG. 2, item 32, col.5: 39-48);

wherein the region contains the scoped breakpoint and wherein the scoped breakpoint is different from the entry breakpoint and the end breakpoint (e.g., FIG. 4, block 56/YES, col.6: 1-36; FIG. 7, col.8: 30-65),

means for saving an identifier of a first thread that executes an instance of the program if the first thread that executes the instance of the program encounters the entry breakpoint (e.g., FIG. 5, col.7: 36-59; FIG. 8, field 150j, col.8: 57-65);

means for determining whether the first thread encounters the scoped breakpoint within the region, halting execution of the first thread that encountered the scoped breakpoint (e.g., FIG. 3, block 96/NO and block 122, col.7: 12-27; FIG. 6, col.8: 16-28).

Bates does not explicitly disclose *a plurality of threads execute the program, wherein the entry breakpoint is executed conditionally further comprises some of the plurality of threads encounter the entry, breakpoint and other of the plurality of threads do not encounter the entry breakpoint.*

However, in an analogous art, Schmidt further discloses *a plurality of threads execute the program, wherein the entry breakpoint is executed conditionally further comprises some of the plurality of threads encounter the entry, breakpoint and other of the plurality of threads do not encounter the entry breakpoint* (e.g., [0009], [0055], [0064], [0094]).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Schmidt's teaching into Bates' teaching. One would have been motivated to do so to monitor/debug a specific condition and halt the execution of a program only when a predetermined value is obtained when the breakpoint is encountered as suggested by Schmidt (e.g., [0009]).

Neither Bates nor Schmidt explicitly discloses other limitations. However, in an analogous art, Akgul further discloses:

means for determining whether the identifier was saved in response to the first thread that executes the instance of the program encountering the entry breakpoint if the first thread encounters the scoped breakpoint within the region (e.g., [0053] and [0056]);

means for halting execution of the first thread that encountered the scoped breakpoint if the identifier was saved in response to the first thread that executes the instance of the program encountering the entry breakpoint and the scoped breakpoint

was encountered by the first thread that executes the instance of the program (e.g., FIG. 10, [0055]-[0056]); *and*

means for allowing execution of the first thread to continue after the scoped breakpoint was encountered without giving control to a user if the identifier was not saved, the, first thread that executes the instance of the program did not encounter the entry breakpoint and the scoped breakpoint was encountered by the first thread that executes the instance of the program (e.g., [0053]-[0056]).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine Akgul's teaching into Bates' teaching. One would have been motivated to do so to provide an efficient and flexible debugging mechanism and differentiate between the operating system first threads or processes by using the detailed state information about the OS internals as suggested by Akgul (e.g., [0016] and [0019]-[0020]).

Claim 6:

The rejection of claim 5 is incorporated. Bates discloses *means for removing the identifier of the first thread that was saved after the first thread encounters the end breakpoint* (e.g., col.6: 1-49; col.7: 28 – col.8: 5).

Claim 7:

The rejection of claim 6 is incorporated. Bates discloses *means for allowing execution of the first thread to continue upon the first thread encountering the end breakpoint without giving control to the user* (e.g., col.3: 36 – col.4: 24; col.8: 29-65).

Claim 8:

The rejection of claim 7 is incorporated. Bates discloses *means for allowing execution of the first thread to continue upon the first thread encountering the entry breakpoint without giving control to the user* (e.g., col.2: 41 – col.3: 4; col.5: 7-54).

Claim 9:

Claim 9 is a computer-readable storage medium version, which recites the same limitations as those of claim 1, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the references teach all of the limitations of the above claim, they also teach all of the limitations of claim 9.

Claim 10:

The rejection of claim 9 is incorporated. Bates also discloses *allowing execution of the first thread to continue upon the first thread encountering the entry breakpoint without giving control to the user* (e.g., col.6: 1-49; col.7: 28 - col.8: 5).

Claim 11:

The rejection of claim 10 is incorporated. Bates discloses *allowing execution of the first thread to continue upon the first thread encountering the end breakpoint without giving control to the user* (e.g., col.3: 36 – col.4: 24; col.8: 29-65).

Claim 12:

The rejection of claim 11 is incorporated. Bates discloses *after the first thread encounters the end breakpoint, removing the identifier of the first thread that was saved* (e.g., col.2: 41 – col.3: 4; col.5: 7-54).

Claim 13:

Claim 13 is a computer system version, which recites the same limitations as those of claim 1, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the references teach all of the limitations of the above claim, they also teach all of the limitations of claim 13.

Claim 14:

The rejection of claim 13 is incorporated. Bates also discloses *after the first thread encounters the end breakpoint, removing the identifier of the first thread that was saved* (e.g., col.6: 1-49; col.7: 28 – col.8: 5).

Claim 15:

The rejection of claim 14 is incorporated. Bates discloses *allowing execution of the first thread to continue upon the first thread encountering the entry breakpoint without giving control to the user* (e.g., col.3: 36 – col.4: 24; col.8: 29-65)

Claim 16:

The rejection of claim 15 is incorporated. Bates discloses *allowing execution of the first thread to continue upon the first thread encountering the end breakpoint without giving control to the user* (e.g., col.2: 41 – col.3: 4; col.5: 7-54).

Claim 17:

Claim 17 recites the same limitations as those of claim 1, wherein all claimed limitations have been addressed and/or set forth above. Therefore, as the references teach all of the limitations of the above claim, they also teach all of the limitations of claim 17.

Claim 18:

The rejection of claim 17 is incorporated. Bates discloses *configuring the computer to remove the saved identifier of the first thread after the first thread encounters the end breakpoint* (e.g., col.6: 1-49; col.7: 28 – col.8: 5).

Claim 19:

The rejection of claim 18 is incorporated. Bates discloses *configuring the computer to allow execution of the first thread to continue upon the first thread encountering the end breakpoint without giving control to the user* (e.g., col.3: 36 – col.4: 24; col.8: 29-65).

Claim 20:

The rejection of claim 19 is incorporated. Bates discloses *configuring the computer to allow execution of the first thread to continue upon the first thread encountering the entry breakpoint without giving control to the user* (e.g., col.2: 41 – col.3: 4; col.5: 7-54).

Conclusion

8. Any inquiry concerning this communication should be directed to examiner Thuy Dao (Twee), whose telephone/fax numbers are (571) 272 8570 and (571) 273 8570, respectively. The examiner can normally be reached on every Tuesday, Thursday, and Friday from 6:00AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam, can be reached at (571) 272 3695.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.

Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is (571) 272 2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Thuy Dao/   /Tuan Q. Dam/
Examiner, Art Unit 2192   Supervisory Patent Examiner, Art Unit 2192